

In The Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (previously presented) A method of bonding two components, the method comprising:
positioning the two components relative to one another to obtain a desired orientation;
and

after positioning the two components, bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding wherein bonding comprises plating the metal on the two positioned components.

2. (original) A method according to Claim 1 wherein a first one of the components comprises a substrate and wherein a second one of the components comprises an optical component.

3. (original) A method according to Claim 1 wherein bonding comprises electroplating the metal on the two components.

4. (original) A method according to Claim 1 wherein bonding comprises electroless plating the metal on the two components.

5. (previously presented) A method of bonding two components, the method comprising:
positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding

wherein bonding comprises providing an electrophoretic coating on the two components wherein the electrophoretic coating comprises the metal and dielectric particles.

Claim 6 (canceled).

7. (previously presented) A method of bonding two components, the method comprising: positioning the two components relative to one another to obtain a desired orientation; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding; wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles;

wherein each of the particles of the metal comprises a dielectric material coated with the metal before bonding the two components.

8. (previously presented) A method according to Claim 15 wherein bonding the metal particles comprises allowing diffusion between the metal particles.

9. (original) A method according to Claim 8 wherein the metal comprises a metal having a relatively high diffusion rate at room temperature.

10. (original) A method according to Claim 9 wherein the metal comprises Indium.

11. (original) A method according to Claim 8 wherein providing the particles of the metal comprises providing the particles of the metal with a dielectric coating thereon and wherein bonding the metal particles is preceded by rupturing the dielectric coatings.

12. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal with a dielectric coating thereon on the two components and bonding the metal particles;

wherein bonding the metal particles includes rupturing the dielectric coatings by passing an electric current through the particles.

Claims 13-14 (canceled).

15. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal with a coating of a solid material that sublimates at a bonding temperature less than the melting temperature of the metal on the two components and bonding the metal particles.

16. (original) A method according to Claim 15 wherein the solid material comprises one of naphthalene or carbon dioxide.

17. (original) A method according to Claim 8 wherein providing the particles of the metal comprises providing the particles of the metal with a diffusion barrier thereon and wherein bonding the metal particles is preceded by rupturing the diffusion barrier.

18. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles; and

wherein providing the particles of the metal comprises vibrating the metal particles apart from the two components, and after positioning the components, applying the metal particles to the two components.

19. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles; and

wherein bonding the metal particles comprises passing an electrical current through the metal particles sufficient to weld interfaces thereof.

20. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles; and

wherein providing the metal particles comprises providing the metal particles in a foam and wherein bonding the metal particles comprises collapsing the foam.

21. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles; and

wherein bonding the metal particles comprises introducing a liquid species that amalgamates with the particles at a bonding temperature less than the melting temperature of the metal.

22. (original) A method according to Claim 21 wherein the metal comprises silver and the liquid species comprises mercury.

23. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles; and

wherein bonding the metal particles comprises corroding the metal particles.

24. (original) A method according to Claim 23 wherein corroding the metal particles comprises oxidizing the metal particles.

25. (original) A method according to Claim 24 wherein corroding the metal particles comprises galvanically corroding the metal particles.

Claim 26 (canceled).

27. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles; and

wherein bonding the metal particles comprises plating a metal on the metal particles after providing the metal particles on the two components.

28. (previously presented) A method of bonding two components, the method comprising:

positioning the two components relative to one another to obtain a desired orientation;
and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding;

wherein bonding comprises providing particles of the metal on the two components and bonding the metal particles; and

wherein bonding the metal particles comprises providing a solution of a second metal on the metal particles to initiate a displacement reaction.

29. (previously presented) A method of bonding two components, the method comprising:

providing particles of a metal on at least one of the two components and vibrating the particles; then

positioning the two components relative to one another to obtain a desired orientation wherein positioning the two components comprises positioning the two components while vibrating the particles; and

bonding the two components in the desired orientation with metal wherein a temperature of both components is maintained below a melting temperature of the metal while bonding wherein bonding the two components comprises ceasing vibrating the particles.

30. (previously presented) A method according to Claim 1 wherein a first one of the two components comprises a substrate.

31. (previously presented) A method according to Claim 30 wherein a second one of the two components comprises one of a micro-electronic component, a micro-optical component, or a micro-mechanical component.

32. (original) A method according to Claim 30 wherein the substrate comprises one of a dam thereon or a well therein.

Claims 33-69 (canceled).

70. (previously presented) A method according to Claim 1 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

71. (previously presented) A method according to Claim 5 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

72. (previously presented) A method according to Claim 5 wherein at least one of the two components comprises an optical component.

73. (previously presented) A method according to Claim 7 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

74. (previously presented) A method according to Claim 7 wherein at least one of the two components comprises an optical component.

75. (previously presented) A method according to Claim 12 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

76. (previously presented) A method according to Claim 12 wherein at least one of the two components comprises an optical component.

77. (previously presented) A method according to Claim 15 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

78. (previously presented) A method according to Claim 15 wherein at least one of the two components comprises an optical component.

79. (previously presented) A method according to Claim 18 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

80. (previously presented) A method according to Claim 18 wherein at least one of the two components comprises an optical component.

81. (previously presented) A method according to Claim 19 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

82. (previously presented) A method according to Claim 19 wherein at least one of the two components comprises an optical component.

83. (previously presented) A method according to Claim 20 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

84. (previously presented) A method according to Claim 20 wherein at least one of the two components comprises an optical component.

85. (previously presented) A method according to Claim 21 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

86. (previously presented) A method according to Claim 21 wherein at least one of the two components comprises an optical component.

87. (previously presented) A method according to Claim 23 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

88. (previously presented) A method according to Claim 23 wherein at least one of the two components comprises an optical component.

89. (previously presented) A method according to Claim 27 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

90. (previously presented) A method according to Claim 27 wherein at least one of the two components comprises an optical component.

91. (previously presented) A method according to Claim 28 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

92. (previously presented) A method according to Claim 28 wherein at least one of the two components comprises an optical component.

93. (previously presented) A method according to Claim 29 wherein at least one of the two components comprises a micro-electronic component, an optical component, and/or a micro-mechanical component.

94. (previously presented) A method according to Claim 29 wherein at least one of the two components comprises an optical component.